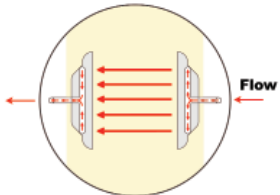


FCS2 Chamber - Non heating - Flow Cell

The Bioptechs FCS2 Chamber is a non heating, parallel plate flow cell where cells are grown on a 40mm glass coverslip. This coverslip is then incorporated into a perfusable fluid optical cavity that is compatible with all modes of microscopy, and its geometry can be easily defined by the user. This Optical Cavity is secured into a fixture on the stage of the microscope where it can be perfused with media or remain static. Media that comes into one of the ports on the side of the chamber, emerges in a fluid optical path where the media is precisely directed over the cells. The media is collected within the optical cavity and directed out of the chamber on the other side. The flow characteristics of the media while in the optical cavity, are easily modified by selecting gaskets of varying geometry that direct the flow. A fluid pathway is formed by separating the Microaqueduct slide from the coverslip containing cells with a single silicone gasket. This gasket can be any thickness from 50 micron to 1mm and any lateral geometry you choose or create. This arrangement allows the user to define the flow characteristics. Therefore, you are not limited by the geometry of the optical cavity instead you select or create it! Fluid access to this flow channel is made through two 14-gauge needle stock tubes protruding from the sides of the chamber top. These tubes provide fluid connection to two perfusion holes in the Microaqueduct slide that interface two "T" shaped grooves cut into the inner surface of the Microaqueduct slide. The "T" groove allows the media to seek the path of least resistance and become nearly laminar before flowing across the cells.

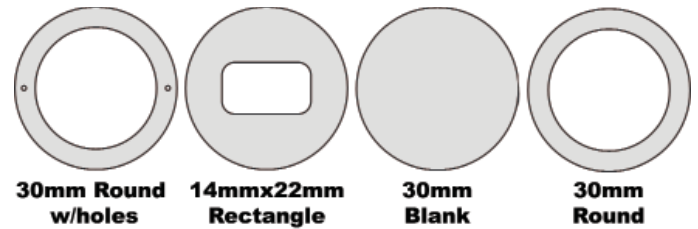
Microaqueduct Slide Perfusion Laminar Flow Region (Designated by Arrows)



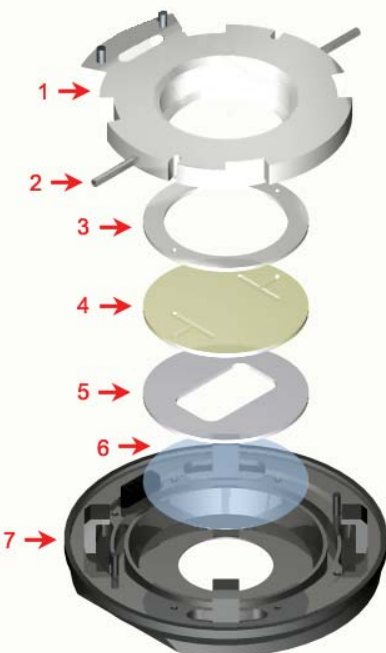
Transparent first surface
thermal transfer coating



- 1) Coverslip
- 2) Top Gasket
- 3) Microaqueduct Slide
- 4) Bottom Gasket



By simply changing the singular lower gasket you can change the volume and flow characteristics of the chamber. This gasket can have any internal geometry you desire and can be any thickness from 0.1mm to 1mm. The drawing above shows the standard shapes of the gaskets that we include with every FCS2. We also include solid blank gaskets for you to custom fit to your application. Once you have found the shape that works best for your experiment you can contact us to have a die made to those specifications. Custom shapes are available, please see the FCS2 or FCS3 page on the website for additional gasket shapes.



- 1) **Upper Half (White Top)**
Contains the perfusion tubes
- 2) **Perfusion Tubes (14 gauge)**
- 3) **Upper Gasket**
- 4) **Microaqueduct Slide**
An optical surface which integrates perfusion
High-volume laminar flow
Koehler Illumination
- 5) **Singular lower gasket**
This gasket can have any internal geometry
you desire
Standard thicknesses from .1mm to 1mm
Allows you to define the volume and flow
characteristics of the chamber
- 6) **40mm coverslip**
Surface where your cells are grown
- 7) **Self locking base**
Designed to assure parallel uniform closure,
eliminate leaks, & broken coverslips
Dovetail mounted to scope for stability
No tools for assembly

Cleaning:

Laboratory soap and water can be used for general cleaning of the white top, microaqueduct slides, gaskets and coverslips. For sterility the white top, microaqueduct slide, gaskets and coverslips can be autoclaved on a short cycle (15 minutes @ 121 C). The chamber base is chrome and contains grease on the threads, so submersion into liquids or autoclaving should be avoided. If spillage occurs inside chamber base disassembly to clean and reassemble. The base can be sterilized by an alcohol wipe, UV or Ethylene Oxide sterilization. Alcohol or other harsh chemical contact to the silicone gaskets should be avoided as degradation will occur.